

found accompanying an adult male, and there is some doubt whether it really is the female of *W. capito*. However, until more evidence is forthcoming, it is best considered as such.

Cornicularia karpinskii, Camb.

Cornicularia pavitans, Camb., List of British & Irish Spiders, 1900.

Neriene pavitans, Camb., Trans. Linn. Soc. Lond., vol. xxviii., 1873, p. 543, pl. xlvi., fig. 13.

Cornicularia pavitans, of which the type is a female, is a very striking species, and is identical with *C. karpinskii*, which has priority. Mr. Cambridge will shortly publish a note on this subject, which I will not anticipate. I obtained a pair of *C. karpinskii* on Helvellyn on August 28th, 1900. They were taken together under one stone, and the association of the male with the female is thus established.

XII.—*Note on the Thorax in Anoplura and in the Genus Nesiotinus of the Mallophaga.* By BRUCE F. CUMMINGS (British Museum of Natural History).

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THORAX IN ANOPLURA.

The three segments of the thorax are fused together*. On the dorsal surface in most species may be seen certain transverse bars or rafters of thick chitin, which serve to support the thoracic nota, to provide on the extreme lateral margin a point for the attachment of the coxæ on each side, and may roughly represent the original delimiting lines between pro-, meso-, and metanotum. No epimeral or episternal pieces can be traced at the sides. The fused thoracic notum fits down as a kind of "lid" upon the sternal surface, which shows no sign of segmentation at all, and in many species carries a single sternal plate of various sizes and shapes.

These notal rafters—or, if we use the cautious phraseology of the systematist, "bands"—are important elements in the exoskeleton, and are frequently made use of by descriptive writers, and certainly afford useful, if superficial, characters.

The Anopluran thorax to the comparative anatomist is of

* My friend Mr. Harrison points out that the prothorax is distinct in *Hæmatomyzus*, which I have not seen.

some interest, inasmuch as it affords us with an example—I imagine, rare in the Insecta—of the attachment of the coxæ to the margin of the dorsal or notal surface. The coxæ, roughly cup-shaped, are applied by their concave surfaces to the ventro-lateral region of the thorax on each side. The lower (or inner) half of the edge of each cup is attached to the sternal surface, while the upper (or outer) half reaches to the depressed margin of the notum, which on each side has a clearly marked rim, and is usually strengthened by a dark longitudinal bar connecting up each transverse rafter. Just where the upper half of each coxal cup establishes a point of contact with the notal rim the chitin of the latter becomes thickened, and often runs out into a dark depressed promontory or jetty—one for each coxa. A rafter runs in from each jetty.

It is unnecessary to summarize here the form and course of these exoskeletal rafters; suffice it to say that, with the exception of the meso-metanotal one in many *Hæmatopini* for example, they rarely run right across the upper surface, but disappear before halfway into the thinner chitin of the middle area.

I believe I have discovered in *Hæmatopinus asini* a pair of clavicles within the prothorax, very much as they occur in some Mallophaga; while in many, if not all, *Hæmatopini* there is present in the middle of the metanotal region a structure of some interest, not hitherto described. It shows on the surface as a small circular depression, but in specimens passed through caustic potash the depression is seen to be the mouth of a small chitinous funnel, which does not descend into the thorax perpendicularly, but is directed backwards as well as downwards, so as to lie beneath, and in many cases to project behind, the posterior margin of the metanotum. The funnel is graduated, and ends blindly in a point, like a dunce's cap. It should be regarded presumably as a thoracic apodeme for the attachment of muscles, and a more careful examination of it by the method of sections might produce results of interest. In one form or another all the members of the genus *Hæmatopinus*, I believe, possess this funnel, and it occurs also in *Antarctophthirus ogmorhini*, End., and in a less funnel-shaped condition in *A. tricheci* (Boh.), and *Pediculus capivi*, De Geer.

THORAX IN *NESIOTINUS* (MALLOPHAGA).

The much more complicated thorax of the Mallophaga presents a very interesting study in comparative anatomy;

but as a memoir which, I believe, will include this subject in its scope is in course of preparation by my friend Mr. Launcelot Harrison, B.Sc., of the University of Sydney, I intend to do no more here than to correct an error extant concerning the thorax of the remarkable species *Nesiotinus demersus*, Kellogg. For our knowledge of this parasite we are indebted to Prof. Vernon Lyman Kellogg, of the Leland Stanford Junior University, California, who, so long ago as in 1903, published a short description in the 'Biological Bulletin of the Marine Laboratory at Woods Hole, Mass.' (vol. v. p. 89, 1903), of a single female specimen received from Dr. Günther Enderlein, and taken on a Kerguelen penguin, *Aptenodytes longirostris*.

No other specimen, according to my knowledge, has since been recorded, and therefore the capture of another female in November 1913 on a king penguin (*Aptenodytes* sp. ? *penanti*) in the Bay of Isles, S. Georgia, by Mr. P. Stammwitz (who accompanied the late Major Gerald Barrett-Hamilton on his whaling expedition) is worthy of being placed on record.

Kellogg remarks that one of the distinguishing features of the genus and species is "the complete distinctness of the pro-, meso-, and metathorax in a degree unequalled elsewhere among the known Mallophaga, unless it be in *Trinoton*." Further on he remarks that the meta-segment is "nearly as wide as the first (widest) abdominal segment," and so resembles an abdominal segment.

No particular reasons are adduced in favour of this singular interpretation, and all Mallophagan morphology is against it. A comparative study of the thorax of Mallophaga makes it certain that the thorax of *Nesiotinus* consists of pro- and metathorax, the mesothorax being quite absent, and that Kellogg has mistaken the first segment of the abdomen for the metathorax. The thorax of *Nesiotinus* is short, and consequently on the sternal surface but little space is left for the articulation of the legs, which are relatively large appendages. There is therefore a good reason why the acetabular bars should be prolonged backwards, so that the hind legs are suspended from the base of the abdomen.

A similar state of affairs occurs in *Menopon antennatum*, Kell. & Paine, where the short thorax has involved a lengthening of the acetabular bars of both the second and third pairs of legs, so that the second pair appears to come from under the metathorax and the third pair from as low down as the second abdominal segment.

Kellogg's interpretation allows only seven segments in the abdomen and only five pairs of spiracles. In all Mallophaga

except *Glicicola* and possibly *Trimenopon* there are six pairs of abdominal spiracles, and they open upon either the third to the eighth or upon the second to the seventh segments—never upon the first segment*.

Finally, neither the chaetotaxy nor the coloration lend any support to Kellogg's interpretation.

XIII.—*Two new Genera of African Muscoidea.* By CHARLES H. T. TOWNSEND, Bureau of Entomology, Washington, D.C.

CONGOCHRYSOSOMA, gen. nov.

Genotype, *Congochrysosoma snyderi*, sp. n.

Differs from *Chrysomasicerca* as follows:—Female only: Eyes bare. Vertex about three-fourths width of one eye. Ocellar bristles very small, but distinct, short. Outer verticals scarcely developed. Second antennal joint elongate, the third only one and one-half times second. Arista shorter. Face rather flattened, epistoma quite prominent, vibrissæ well above oral margin. Parafacials bristly in middle. Four lateral pairs of scutellar macrochaetæ; a short median pair on first abdominal segment, no discals on intermediate segments. Hind tibiæ short-ciliate, with a longer bristle below middle.

Congochrysosoma snyderi, sp. n.

Length of body 11.5 mm., of wing 9.5 mm.

One female, Luebo, Congo (*D. W. Snyder*).

Face dull silvery, the parafacials with a faint greenish lustre. Checks silvery, with a bronze lustre. Parafrontals greenish bronze. Frontalia and antennæ blackish, the second antennal joint brown. Palpi fulvous, infusate at base. Mesoscutum and arcuate area on base of scutellum greenish bronze; five vittæ showing, widening and narrowing with the incidence of light, the middle one disappearing in front of suture in some lights. Pleuræ, humeri, and outer aspect of front femora rather silvery. Abdomen and very broad margin of scutellum bright frosted green, the first segment and rather irregular hind borders of others black.

* See Launcelot Harrison, 'Parasitology,' vol. viii. no. 1, June 25th, 1915, p. 101.